

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
6 October 2005 (06.10.2005)

PCT

(10) International Publication Number  
**WO 2005/093075 A1**

(51) International Patent Classification<sup>7</sup>: **C12N 15/63**

(21) International Application Number:  
PCT/EP2005/003126

(22) International Filing Date: 23 March 2005 (23.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
04007278.7 26 March 2004 (26.03.2004) EP  
60/570,497 13 May 2004 (13.05.2004) US

(71) Applicant (for all designated States except US):  
**FRIEDRICH-ALEXANDER- UNIVERSITÄT ER-  
LANGEN- NÜRNBERG** [DE/DE]; Schlossplatz 4,  
91054 Erlangen (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HILLEN, Wolfgang**  
[DE/DE]; Maria-Gebbert-Strasse 17, 91080 Uttenreuth  
(DE). **KLOTZSCHE, Marcus** [DE/DE]; Spessartweg 10,  
91056 Erlangen (DE). **BERENS, Christian** [DE/DE];  
Schenkstr. 168, 91052 Erlangen (DE).

(74) Agent: **VOSSIUS & PARTNER**; Siebertstrasse 4, 81675  
Munich (DE).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,  
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,  
ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: PEPTIDE-BASED METHOD FOR MONITORING GENE EXPRESSION IN A HOST CELL

(57) Abstract: The present invention relates a method for monitoring the expression level of a gene in a host cell by modulating the activity of a regulatory biomolecule, comprising the steps of: (a) transforming a cell expressing a regulatory biomolecule with a nucleic acid molecule comprising an open reading frame encoding an interaction partner of said biomolecule in expressible form, wherein (i) said regulatory biomolecule is either a nucleic acid binding molecule that effects its regulatory activity upon binding or an allosterically controlled ribonucleic acid molecule; and (ii) the interaction partner of the biomolecule is encoded by a nucleic acid molecule comprising: (1) a nucleic acid sequence encoding a tagged (poly)peptide, (2) a nucleic acid sequence encoding a tagged (poly)peptide or a peptide tag, a selectable marker gene and additional nucleotide sequences for site specific, in-frame integration of said nucleic acid molecule into the coding sequence of at least one host (poly)peptide of interest, wherein said tag comprises the interacting residues of the interaction partner, or (3) a nucleic acid sequence encoding a peptide tag.



WO 2005/093075 A1